Volunteer Lake Assessment Program Individual Lake Reports

ISLAND POND, STODDARD, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	21,874	**Max. Depth (m):**	5.5	**Flushing Rate (yr^{-1}):**	32.3
Surface Area (Ac.):	158	**Mean Depth (m):**	2.3	**P Retention Coef:**	0.28
Shore Length (m):	6,300	**Volume (m^3):**	1,668,500	**Elevation (ft):**	1281

TROPHIC CLASSIFICATION

Year	Trophic class
1993	MESOTROPHIC
2004	MESOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

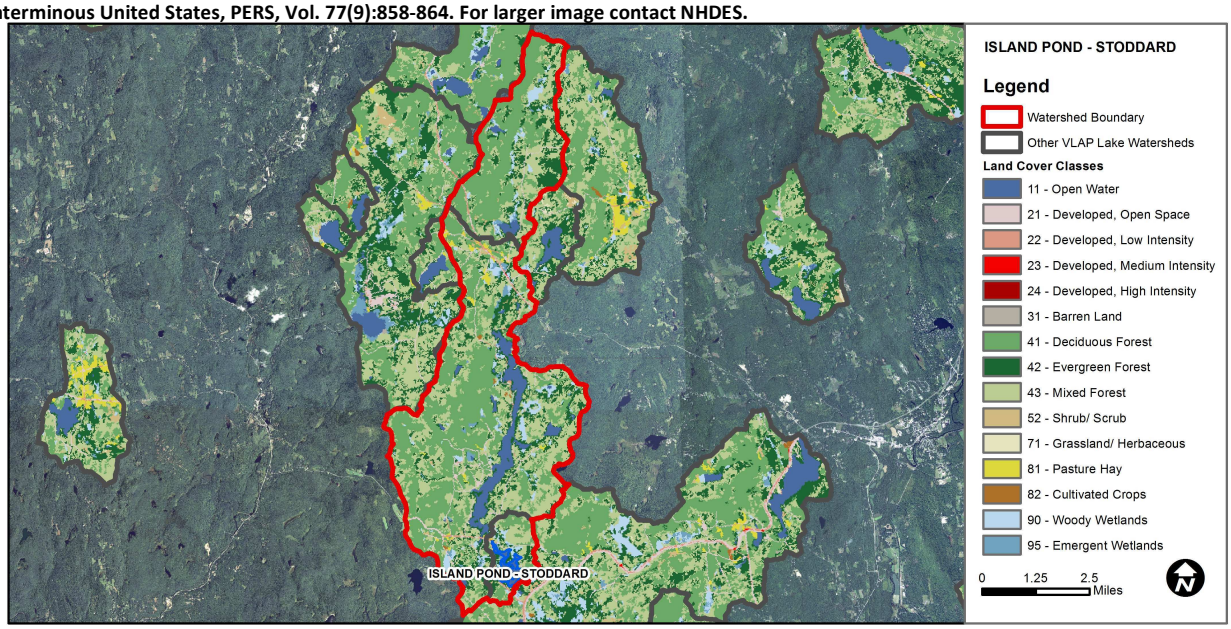
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

ISLAND POND - PUBLIC BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.

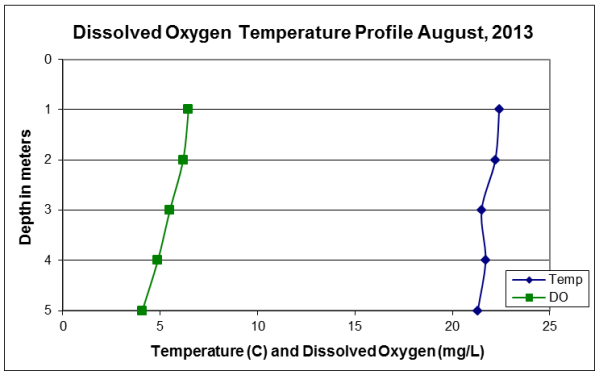


Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	5.84	Barren Land	0	Grassland/Herbaceous	0.05
Developed-Open Space	2.62	Deciduous Forest	38.21	Pasture Hay	0.91
Developed-Low Intensity	0.67	Evergreen Forest	15.24	Cultivated Crops	0.09
Developed-Medium Intensity	0.01	Mixed Forest	31.12	Woody Wetlands	3.58
Developed-High Intensity	0	Shrub-Scrub	0.57	Emergent Wetlands	0.91

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
ISLAND POND, STODDARD, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Chlorophyll levels were slightly elevated on each sampling event and the 2013 average was greater than the state median. Average chlorophyll levels have increased steadily since 2010. Historical trend analysis indicates relatively stable chlorophyll with moderate variability between years.
- **CONDUCTIVITY/CHLORIDE:** Conductivity levels were low and below the state median at all stations. Historical trend analysis indicates significantly decreasing (improving) epilimnetic conductivity since monitoring began. We hope to see this continue!
- **E. COLI:** Inlet and Outlet E. coli levels were well below the state standard for surface waters on each sampling event.
- **TOTAL PHOSPHORUS:** Epilimnetic and hypolimnetic phosphorus levels were elevated in June likely due to the above average rainfall and stormwater runoff. Historical trend analysis indicates significantly decreasing (improving) epilimnetic phosphorus since monitoring began. We hope to see this continue! Tributary phosphorus levels were relatively low and stable throughout the summer.
- **TRANSPARENCY:** Viewscope transparency was relatively stable throughout the summer and slightly less than the state median. Historical trend analysis indicates stable transparency with low variability between years.
- **TURBIDITY:** Hypolimnetic turbidity was slightly elevated in June, however turbidity was low at all other stations.
- **PH:** Deep spot and tributary pH levels were lower than desirable range 6.5 – 8.0 units and potentially critical to aquatic life.
- **RECOMMENDED ACTIONS:** The improving epilimnetic conductivity and phosphorus trends are encouraging; however increased stormwater runoff from significant early summer storm events may have contributed excess phosphorus that promoted increased algal growth. Educate lake and watershed residents on ways to reduce stormwater runoff from their properties utilizing DES' "Homeowner's Guide to Stormwater Management".



NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

Table 1. 2013 Average Water Quality Data for ISLAND POND

Station Name	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m	Turb. ntu	pH
						VS		
Inlet			24.4	37	12		0.66	6.14
Outlet			26.2	17	10		0.63	6.13
Epilimnion	2.17	6.95	24.7		12	2.93	0.72	6.01
Hypolimnion			24.1		14		1.14	5.79

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data highly variable.	Chlorophyll-a	Stable	Trend not significant; data moderately variable.
Conductivity	Improving	Data significantly decreasing.	Transparency	Stable	Trend not significant; data show low variability.
			Phosphorus (epilimnion)	Improving	Data significantly decreasing.